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KappArest™

The inflammatory cascade initiated by an environmental trigger can lead to the activation of NF-kappaB (nuclear factor kappa-light-chain-enhancer of activated B cells). NF-kappaB is a protein complex that acts as an intracellular 'amplifier' that promotes the production of the direct mediators of inflammation such as cytokines, prostaglandins, leukotrienes, nitric oxide, and free radicals. If NF-kappaB is not inhibited, it becomes free to enter the nucleus of cells and bind with the DNA, subsequently activating genes which encode for the increased production of further inflammatory mediators. When left unchecked, this can lead to the development of health issues such as pain, inflammation, cardiovascular degeneration, insulin resistance, autoimmune disorders, free radical pathology, and neurodegeneration. Sadly, inflammation has become overwhelmingly prevalent, largely in part to the pro-inflammatory nature of the Standard British Diet (SBD) and the nutritional deficiencies resulting from it, stress-laden lifestyles, and other constant environmental insults. Formulated in conjunction with Dr. Alex Vasquez, **KappArest™** contains a proprietary blend of curcuminoids (turmeric extract), *Boswellia serrata* extract, propolis, green tea extract, ginger extract, rosemary extract, celery seed extract, resveratrol, alpha-lipoic acid, Phytolens, and *Piper nigrum*. **KappArest™** was designed, and has been shown to supply targeted nutrition that inhibits the production of NF-kappaB, and has been documented to have a positive impact on the production of inflammatory mediators¹. **KappArest™** has also demonstrated its ability to modulate inflammatory responses². **Optimal EFAs®** and **Bio-D-Mulsion Forte®** are two additional products available from Biotics Research Corporation that are commonly used in conjunction with **KappArest™** for their synergistic action in downregulating pro-inflammatory mediators that impact systemic inflammation. Once again, Biotics Research Corporation brings you "The Best of Science and Nature".

1. *Journal of Dietary Supplements*, Vol. 7 (3), 2010

2. *Journal of Dietary Supplements*, Early Online: 1-15, 2011



Research Pertaining to Other Topics of Interest

Telomere Length and the Common Cold. Shorter telomeres in leukocytes is associated with increased synthesis of proinflammatory cytokines which has implications for immunocompetence, as well as age-related morbidity and mortality from conditions including infectious diseases, cancer and cardiovascular disease. Researchers conducted a study to determine if telomere length in leukocytes is associated with resistance to viral upper respiratory infections in young to midlife adults. In this study of 152 people (ages 18-55), participants were assessed for telomere lengths in peripheral blood mononuclear cells and T-cell subsets. Each was then administered nasal drops containing rhinovirus 39 (a common cold virus) and monitored for 5 days for the development of infections and clinical illness. The results showed that those with shorter telomeres were as much as 70% more likely to develop symptoms of upper respiratory infection and clinical illness.

Cohen S et al. Association between telomere length and experimentally induced upper respiratory viral infection in healthy adults. *JAMA* 2013 Feb 20; Vol 309, No 7:699